Bald Eagle Nesting and Wintering Surveys

Brent Ortego, Len Polasek, Kevin Herriman, and Annice Storey, Texas Parks and Wildlife Department

TPWD PHOTO

Nesting *bald eagles* (*Haliaeetus leucocephalus*) have been monitored in Texas since the 1960s, at which time there were an estimated 3 known active nesting territories. In the 1970s, efforts were increased to find and document active nesting territories. From 1975 to 2000 the number of known active nests increased from 7 to 78, respectively. This increase was due to a combination of an increasing bald eagle population, an increase in agency effort, and an increase in public awareness and reporting of nests.

The nesting population of bald eagles is estimated using aerial and ground surveys of known and newly reported bald eagle nests. Surveys are conducted annually January through April. Data collected includes nest location, general site description, activity status, productivity, and estimated hatching date. These data are used extensively to aid in the preparation of environmental impact assessments for development projects in areas of known nesting activity.

Annual surveys of non-nesting bald eagles are conducted on 22 standardized locations during mid-January. Survey sites include the Laguna Atascosa National Wildlife Refuge, the Attwater Prairie Chicken National Refuge, the Garwood/Eagle Lake Rice Prairies, and 19 reservoirs throughout North, Central, and East Texas. These surveys are coordinated by Texas Parks and Wildlife Department personnel but utilize volunteer labor. Volunteers conducted surveys on 20 of the 22 sites in 2000 and reported 218 bald eagles. During January 2000, the greatest numbers were found on Lake Palestine and Lake Texoma with 39 and 32 eagles, respectively.

These are ongoing annual surveys funded by the Texas Parks and Wildlife Department through Federal Aid in Wildlife Restoration Grant W-125-R-11.

Historical and Local Processes Determining the Current Status of the Alligator Snapping Turtle in Texas

Chris S. Collins and Lee A. Fitzgerald, Texas A&M University
D. Craig Rudolph and Richard Conner, U.S. Forest Service, Southern Research Station
Ricky W. Maxey, Texas Parks and Wildlife Department

The purpose of this ongoing study is to determine the status and distribution of the alligator snapping turtle (*Macroclemys temminckii*) in Texas and to identify historical and ecological factors associated with the distribution of this species. Historical distributions were obtained by examining museum records and published literature. We also investigated the present distribution of alligator snapping turtles by trapping at various locations in Texas.

RICKY W. MAXEY

When possible, each site was surveyed for alligator snapping turtles for 45 trap nights (15 traps for 3 days) and various habitat parameters were measured at each site. These habitat parameters were measured at individual trap locations and at points 66 feet (20 m) above and below each individual trap location. Alligator snapping turtles were captured using 3.9-foot (1.2-m) diameter hoop nets baited with fresh fish. Bait was changed daily. Once captured, turtles were permanently marked using stainless steel pan-head screws placed in the rear marginals of the carapace. Each marginal corresponded to a specific number and by marking different combinations of marginal scutes; each turtle was assigned a unique identification number. Captured turtles were also sexed, weighed, and various morphological characters measured. Morphological characters measured were straight-line carapace length, maximum carapace length, carapace width, plastron length, maximum depth of shell, and skull width.

We have also created an alligator snapping turtle questionnaire that is being distributed to state natural resource personnel, which may give us additional site records and morphological measurements for alligator snapping turtles. Museum and published records indicate that alligator snapping turtles are known from the Sulphur, Cypress, Sabine, Neches, Neches-Trinity, Trinity, San Jacinto, San Jacinto-Brazos and possibly the Red River drainage. There is a record from Red River County but we do not know if this turtle is from the Red or the Sulphur River drainage. A record from the San Antonio River in the 1800s is probably a mistake. A fossil record of the alligator snapping turtle has been found in the Brazos River. There is a possible Brazos River site record (a photograph) of an alligator snapping turtle. A fisheries biologist from Texas A&M University took the photograph but we have not yet obtained it. This would be significant in that the record would extend the present range of alligator snapping turtles to the Brazos River drainage.

We have surveyed all the major river drainages where alligator snapping turtles historically occurred except for the San Jacinto. Thus far, we have captured 31 alligator snapping turtles (0.65 turtles/10 trap days) and collected 1 road-killed specimen that will be deposited in the Texas Cooperative Wildlife Collection at Texas A&M University. Where surveys have been completed, we have captured alligator snapping turtles in all drainages where they historically occurred except for the Sulphur and possibly the Red River drainages. The Sulphur River drainage (White Oak Creek) was inadequately surveyed due to theft of most of our hoop nets. Also, we did not catch alligator snapping turtles in the Red River drainage and we have not yet determined if a recent record is from the Red or the Sulphur River. There were no turtles caught in the Navasota River, part of the Brazos River drainage, outside the known range of alligator snapping turtles. Also, alligator snapping turtles have been captured at sites above and below Livingston Reservoir, Texas in the Trinity River drainage.

We documented 3 new county records for alligator snapping turtles during the first season of this 3-year survey: Angelina, Nacogdoches, and Leon counties. The Angelina and Nacogdoches County records fill a gap within the known range. Leon County, although a slight westward expansion of the turtle's range, lies within the Trinity River drainage where alligator snapping turtles were historically found. The alligator snapping turtle weights ranged from 1.7 to 102.5 lb (0.8 to 46.5 kg); there were 13 males, 15 females, and 4 juveniles. The smallest turtle was caught in Bingham Lake (an oxbow lake), Tyler County, Texas and the largest turtle was captured in Caddo Lake, Harrison County, Texas. We have also instrumented five alligator snapping turtles with radio transmitters in Bonaldo Creek, Stephen F. Austin Experimental Forest, Texas. Bonaldo Creek is a third order stream with shallow runs and deep pools. The creek's waters eventually enter the Angelina River via Loco Bayou. We are currently collecting data on home range and habitat selection. Thus far, most turtles have moved up stream nocturnally and spend the day in pools or near structure such as logs or bank undercuts.

Funding for this research was provided in part by Section 6 Grant E-1-12 from the U.S. Fish and Wildlife Service Endangered Species Program.

Regional Variation in Ecology and Demography of the Texas Tortoise

Richard T. Kazmaier and Eric C. Hellgren, Oklahoma State University
Donald C. Ruthven III and Sam F. Patten, Texas Parks and Wildlife Department

RICHARD T. KAZMAIER

Assessment of regional variation in demography and ecology is critical for the development and implementation of management plans, particularly for threatened or endangered species. The Texas tortoise (*Gopherus berlandieri*) has a distribution within the United States that is restricted to southern Texas, and the species is currently protected as a threatened species within the state. Additionally, there has been increasing concern about the potential effects of habitat fragmentation on this poorly studied species, particularly in the rapidly changing Lower Rio Grande Valley (LRGV). In light of observations of regional variation in body size across its relatively small geographic range within Texas, we initiated a long-term study in 1999 to investigate variation in demography and ecology of this protected species with respect to geographic location and habitat fragment size.

Texas tortoises have been monitored on Chaparral Wildlife Management Area (WMA) since 1990, with over